CLAIMS

1. A system comprising:

at least one device having a processor-controlled machine for causing at least one function specified by a user to be carried out and a control apparatus for enabling voice-control of the processor-controlled machine and a speech processing apparatus having means for receiving speech data representing speech by a user, a grammar store storing speech recognition grammars, speech recognition means for recognising speech in the received speech data using at least one of the speech recognition grammars, speech interpreting means for interpreting the recognised speech to provide instructions for controlling at least one function of a processor-controlled machine and transmitting means for transmitting the instructions to the control apparatus,

the control apparatus being arranged to couple the processor-controlled machine to the speech processing apparatus and having means for providing speech recognition grammar instructions regarding the speech recognition grammar to be used by the speech recognition means for recognising speech data and means for transmitting speech recognition grammar instructions to the speech processing apparatus, wherein the grammar

store comprises at least first and second grammars having grammar rules and at least one interface grammar defining grammar rules, the first grammar being arranged to use grammar rules defined by the interface grammar and the second grammar being arranged to implement rules defined by the interface grammar, and wherein the speech recognition grammar instructions providing means is arranged to provide instructions for causing the second grammar to be linked to the first grammar using the interface grammar.

2. A system according to claim 1, wherein the control apparatus comprises a JAVA virtual machine.

3. A system according to claim 1, wherein the processor-controlled machine of said at least one device is arranged to carried out said at least one function.

4. A system according to claim 3, wherein the processor-controlled machine is selected from the group consisting of:

a photocopier, a facsimile machine, a multi-function machine, a television, a video cassette recorder, a microwave oven, a heating system, a lighting system.

5. A system according to claim 1, wherein the processor-controlled machine of said at least one device is arranged to cause another device coupled to the network to carry out the at least one function.

6. A system according to claim 5, comprising as said other device a device comprising a processor-controlled machine and a control apparatus.

7. A system according to claim 5, wherein the at least one device comprises a digital camera and said other device comprises a printer.

8. A system according to claim 7, wherein the first grammar comprises a camera grammar and the second grammar comprises a printer grammar.

9. A system according to claim 1, wherein the control apparatus comprises receiving means for receiving instructions derived from speech recognised by the speech recognition means;

dialog communication means for communicating with the user to provide information to the user in response to instructions received by said receiving means thereby enabling a dialog with the user, wherein the dialog

communication means has a number of different dialog states and is arranged to change dialog states in response to instructions receiving by the receiving means, the control apparatus being arranged to supply to the speech processing apparatus instructions regarding the speech recognition grammar or grammars to be used in dependence upon the dialog state of the dialog communication means such that, in at least one dialog state, the control apparatus is arranged to provide instructions to cause said first and second grammars to be linked by said interface grammar.

10. A system according to claim 1, wherein the control apparatus is arranged to couple the processor-controlled machine to the speech processing apparatus via a network.

11. A speech processing apparatus for receiving speech data representing commands spoken by a user for controlling a function of a device, the speech processing apparatus having:

receiving means for receiving speech data representing speech by a user;

a grammar store storing speech recognition grammars;

speech recognition means for recognising speech in the received speech data using at least one of the speech recognition grammars;

speech interpreting means for interpreting recognised speech to provide instructions for enabling a function of a device to be controlled; and

transmitting means for transmitting the instructions to a device for enabling control of a function of that device, wherein the grammar store comprises at least first and second grammars having grammar rules and at least one interface grammar defining grammar rules, the first grammar being arranged to use grammar rules defined by the interface grammar and the second grammar being arranged to implement rules defined by the interface grammar such that the second grammar can be linked to the first grammar using the interface grammar to form an extended grammar.

12. A speech processing apparatus according to claim 11, wherein the first and second grammars comprises camera and printer grammars, respectively.

13. A control apparatus for coupling a processor-controlled machine to speech processing apparatus for enabling a user to control a function of a machine by

spoken commands, the control apparatus having: means for providing speech recognition grammar instructions defining a speech recognition grammar or grammars to be used by the speech processing apparatus means for recognising speech data; and means for transmitting to the speech processing apparatus the speech recognition grammar instructions for speech data representing words spoken by a user, the speech recognition grammar instructions providing means being arranged to provide instructions for causing first and second grammars to be linked by an interface grammar having grammar rules usable by the first grammar and implementable by the second grammar so as to form an extended grammar.

14. A control apparatus for enabling coupling of a processor-controlled machine to speech processing apparatus for enabling a user to control a function of the processor-controlled machine by spoken commands, the control apparatus comprising:

receiving means for receiving from the speech processing apparatus instructions derived from speech recognised by the speech processing apparatus;

dialog communication means for communicating with the user to provide information to the user in response to instructions received from the speech processing

apparatus thereby enabling a dialog with the user, wherein the dialog communication means has a number of different dialog states and is arranged to change dialog state in response to received instructions, the control apparatus being arranged to supply to the speech processing apparatus instructions regarding the speech recognition grammar or grammars to be used in dependence upon the dialog state of the dialog communication means such that, in at least one dialog state, the control apparatus is arranged to provide instructions to cause first and second grammars to be linked by an interface grammar having grammar rules usable by the first grammar and implementable by the second grammar so as to form an extended grammar.

15. A control apparatus according to claim 13, wherein the control apparatus comprises a JAVA virtual machine.

16. A device couplable to a network, the device comprising a control apparatus in accordance with the claim 13 and a processor-controlled machine.

17. A device according to claim 16, wherein the processor-controlled machine is arranged to carry out at least one function.

18. A device according to claim 17, wherein the processor-controlled machine is selected from the group consisting of:

a photocopier, a facsimile machine, a multi-function machine, a television, a video cassette recorder, a microwave oven, a heating system, a lighting system.

19. A device according to claim 16, wherein the processor-controlled machine is arranged to cause another device coupled to the network to carry out the at least one function.

20. An assembly comprising a device in accordance with claim 19 and, as said other device, a device comprising a processor controlled machine and a control device.

21. An assembly according to claim 20, wherein the device comprises a digital camera and said other device comprises a printer.

22. A grammar store for use in a system in accordance with claim 1, the grammar store having at least one of the following:

a first grammar; an interface grammar defining grammar rules usable by the first grammar; and a second

grammar configured to implement grammar rules defined by the interface grammar to enable the first and second grammars to be linked by the interface grammar to form an extended grammar.

23. A grammar store for use in a system in accordance with claim 7, the grammar store having at least one of the following:

a first grammar comprising one of a camera and a printer grammar;

a second grammar comprising the other of the camera and printer grammars; and

an interface grammar defining grammar rules usable by the first grammar, the second grammar being configured to implement grammar rules defined by the interface grammar to enable the first and second grammars to be linked by the interface grammar to form an extended grammar.

24. A computer program product comprising processor implementable instructions for configuring a processor to provide control apparatus of a system in accordance with claim 1.

25. A signal comprising a computer program product in accordance with claim 24.

26. A storage medium carrying a computer program product in accordance with claim 24.

27. In a system comprising:

at least one device having a processor-controlled machine for causing at least one function specified by a user to be carried out and a control apparatus for enabling voice-control of the processor-controlled machine and a speech processing apparatus having means for receiving speech data representing speech by a user, a grammar store storing speech recognition grammars, speech recognition means for recognising speech in the received speech data using at least one of the speech recognition grammars, speech interpreting means for interpreting the recognised speech to provide instructions for controlling at least one function of a processor-controlled machine and transmitting means for transmitting the instructions to the control apparatus, a method of operating the control apparatus which comprises:

providing speech recognition grammar instructions regarding the speech recognition grammar to be used by

the speech recognition means for recognising speech data to the speech processing apparatus to cause a first grammar using grammar rules defined by an interface grammar to be linked by the interface grammar to a second grammar which implements rules defined by the interface grammar to form an extended grammar.

28. A method according to claim 27, which comprises:

receiving instructions derived from speech recognised by the speech recognition means;

communicating with the user to provide information to the user in response to received instructions enabling a dialog with the user with the dialog having a dialog state dependent on the received instructions; and supplying to the speech processing apparatus instructions regarding the speech recognition grammar or grammars to be used in dependence upon the dialog state such that, in at least one dialog state, the instructions cause said first and second grammars to be linked by said interface grammar.

29. A method of operating a speech processing apparatus for receiving speech data representing commands spoken by a user for controlling a function of a device, the method comprising:

receiving speech data representing speech by a user;

accessing a grammar store comprising at least first and second grammars having grammar rules and at least one interface grammar defining grammar rules;

causing a first grammar which uses grammar rules defined by an interface grammar to be linked by the interface grammar to a second grammar which implements rules defined by the interface grammar;

recognising speech in the received speech data;

interpreting recognised speech to provide instructions for enabling a function of a device to be controlled; and

transmitting the instructions to a device for enabling control of a function of that device to form an extended grammar.

30. A method of operating a control apparatus for coupling a processor-controlled machine to speech processing apparatus for enabling a user to control a function of a machine by spoken commands, which method comprises transmitting speech recognition grammar instructions defining a speech recognition grammar or grammars to be used by the speech processing apparatus means for recognising speech data including instructions for causing first and second grammars to be linked by an

interface grammar having grammar rules usable by the first grammar and implementable by the second grammar so as to form an extended grammar.

31. A method of operating a control apparatus for enabling coupling of a processor-controlled machine to speech processing apparatus remote from the processor-controlled machine for enabling a user to control a function of the processor-controlled machine by spoken commands, the method comprising:

receiving from the speech processing apparatus instructions derived from speech recognised by the speech processing apparatus;

communicating with the user to provide information to the user in response to instructions received from the speech processing apparatus using a dialog which has a number of different dialog states dependent upon the received instructions; and supplying to the speech processing apparatus instructions regarding the speech recognition grammar or grammars to be used in dependence upon the dialog state of the dialog communication means such that, in at least one dialog state, the instructions cause first and second grammars to be linked by an interface grammar having grammar rules usable by the

first grammar and implementable by the second grammar so as to form an extended grammar.

32. A computer program product comprising processor implementable instructions for causing a processor to carry out a method in accordance with claim 27.

33. A signal or storage medium carrying a computer program product in accordance with claim 32.

34. A control apparatus for enabling a user to control a function of each of a plurality of processed-controlled machines by spoken commands interpreted by speech processing apparatus using speech recognition grammars, the control apparatus having a connection manager for determining from a command spoken by a user the machine that the user wishes to control and speech recognition grammar accessing means for accessing a grammar or grammars for the machine identified by the connecting manager to enable subsequent commands to be interpreted by the speech processing apparatus using the access grammar or grammars.

35. An apparatus according to claim 34, wherein the control apparatus is arranged to access the speech

recognition grammar or grammars by downloading from the identified machine.

36. A control apparatus according to claim 34, incorporating speech processing apparatus for processing commands received by the control apparatus.

37. A control apparatus according to claim 34, wherein the connection manager is arranged to determine from commands spoken by a user when the user wishes to control another machine and to access the speech recognition grammar or grammars for that machine to enable subsequent commands to interpreted using the accessed grammar or grammars.

38. A system comprising:

a processor-controlled machine for causing at least one function specified by a user to be carried out; a control apparatus for enabling voice-control of the processor-controlled machine;

an audio input device for receiving speech from a user and for supplying speech data representing the received speech; and

a speech processing apparatus having means for receiving speech data from the audio input device, a

grammar store storing speech recognition grammars, speech recognition means for recognising speech in the received speech data using at least one of the speech recognition grammars, speech interpreting means for interpreting the recognised speech to provide instructions for controlling at least one function of a processor-controlled machine and transmitting means for transmitting the instructions to the control apparatus,

the control apparatus being arranged to couple the processor-controlled machine to the speech processing apparatus and having means for providing speech recognition grammar instructions regarding the speech recognition grammar to be used by the speech recognition means for recognising speech data and means for transmitting speech recognition grammar instructions to the speech processing apparatus, wherein the grammar store comprises at least first and second grammars having grammar rules and at least one interface grammar defining grammar rules, the first grammar being arranged to use grammar rules defined by the interface grammar and the second grammar being arranged to implement rules defined by the interface grammar, and wherein the speech recognition grammar instructions providing means is arranged to provide instructions for causing the second

grammar to be linked to the first grammar using the interface grammar.